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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,199	02/25/2004	Misty Azara	CQ10218	3364

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SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER
COLUCCI, MICHAEL C

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
04/01/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@sughrue.com
USPatDocketing@sughrue.com

Office Action Summary	Application No.	Applicant(s)	
	10/785,199	AZARA ET AL.	
	Examiner	Art Unit	
	MICHAEL C. COLUCCI	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 13, 14, 27, and 28 rejected under 35 U.S.C. 102(b) as being anticipated by Shriberg et al. "Can Prosody Aid the Automatic Classification of Dialog Acts in Conversational Speech?" (hereinafter Shriberg).

Re claim 13, Shriberg teaches a method of synthesizing speech using discourse function level prosodic features comprising the steps of:

determining output information (Pages 4-5, Why Use Prosody?);

determining discourse functions in the output information based on a contextually aware theory of discourse analysis using a mapping between basic discourse constituents of the contextually aware theory of discourse analysis and a plurality of discourse functions (Pages 8-13);

determining a model of discourse function level prosodic features (Pages 14-18);

determining adjusted synthesized speech output (Pages 4-5, Why Use Prosody?) based on the discourse functions and the model of discourse function level prosodic features (Pages 14-18).

Re claims 14 and 28, Shriberg teaches the method of claim 13, in which the context is at least one of: semantic, pragmatic, and syntactic context (pages 4-5)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-12, 15-26, and 29-30 rejected under 35 U.S.C. 103(a) as being unpatentable over Shriberg et al. "Can Prosody Aid the Automatic Classification of Dialog Acts in Conversational Speech?" (hereinafter Shriberg) in view of Chino US 5761637 A (hereinafter Chino).

Re claims 1, 15, 29, and 30, Shriberg teaches a method of synthesizing speech (Page 5) using discourse function level prosodic features (Pages 14-18) comprising the steps of:

determining output information (Pages 4-5, Why Use Prosody?);

determining discourse functions in the output information the discourse functions being determined based on a mapping between basic discourse constituents of the determined theory of discourse analysis and a plurality of discourse functions (Pages 8-13);

determining a model of discourse function level prosodic features (Pages 14-18);

determining adjusted synthesized speech output (Page 5) based on the discourse functions and the model of discourse function level prosodic features (Pages 14-18)

However, determining a theory of discourse analysis from a plurality of theories (Chino Col. 1 lines 41-49) of discourse analysis based on the speech to be synthesized (Chino Col. 6 lines 13-60 Fig. 7);

Chino teaches a discourse structure extraction section 7 receives the utterance function corresponding to each clue from the utterance function extraction section 5 and generates the discourse structure representing the flow of dialogue by referring to a structure generation rule memory section 8. The structure generation rule memory section 8 previously memorizes structure generation rule. Then, a discourse structure memory section 9 stores the discourse structure. (This processing will be explained afterward). Chino teaches various discourse structures generated based on the utterance function extraction unit. Additionally, Chino teaches the use of Discourse Structure Theory or Situation Semantics as part of natural language processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention determining a theory of discourse analysis from several theories of

discourse analysis for synthesizing speech using discourse function level prosodic features, where discourse functions are mapped to discourse functions. Using a discourse structure or analysis allows for diversification of various types of utterances, where conversational speech of different topics can be distinguished from one another and learned by the speech processing system.

Re claims 2 and 16, Shriberg teaches the method of claim 1, wherein the discourse functions are determined based on the determined theory of discourse analysis (Pages 8-13).

Re claims 3 and 17, Shriberg fails to teach the method of claim 2, in which the theory of discourse analysis (Chino Col. 1 lines 41-49) is at least one of: the Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structures Theory, Discourse Structure Theory and Structured Discourse Representation Theory (Chino Col. 6 lines 13-60 Fig. 7);

Chino teaches a discourse structure extraction section 7 receives the utterance function corresponding to each clue from the utterance function extraction section 5 and generates the discourse structure representing the flow of dialogue by referring to a structure generation rule memory section 8. The structure generation rule memory section 8 previously memorizes structure generation rule. Then, a discourse structure memory section 9 stores the discourse structure. (This processing will be explained afterward). Chino teaches various discourse structures generated based on the

utterance function extraction unit. Additionally, Chino teaches the use of Discourse Structure Theory or Situation Semantics as part of natural language processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention determining a theory of discourse analysis from several theories of discourse analysis for synthesizing speech using discourse function level prosodic features, where discourse functions are mapped to discourse functions. Using a discourse structure or analysis allows for diversification of various types of utterances, where conversational speech of different topics can be distinguished from one another and learned by the speech processing system.

Re claims 4 and 18, Shriberg teaches the method of claim 1, wherein the output information (Pages 4-5, Why Use Prosody?) is at least one of text information and application output information (Pages 8-13).

Re claims 5 and 19, Shriberg teaches the method of claim 1, wherein determining the adjusted synthesized speech output (Pages 4-5, Why Use Prosody?) further comprises the steps of:

determining a synthesized speech output (Pages 4-5, Why Use Prosody?) based on the output information (Pages 8-13);

determining discourse function level prosodic feature adjustments (Pages 14-18);

determining adjusted synthesized speech output based on the synthesized speech output (Pages 8-13) and the discourse level prosodic feature adjustments (Pages 14-18).

Re claims 6 and 20, Shriberg teaches the method system of claim 1, wherein the model of discourse function level prosodic features (Pages 14-18) is a predictive model of discourse functions (Page 19).

Re claims 7 and 21, Shriberg teaches the method of claim 6, in which the predictive models are determined based on at least one of: machine learning and rules (Page 19).

Re claims 8 and 22, Shriberg teaches the method of claim 1, in which the prosodic features occur in at least one of a location: preceding, within and following the associated discourse function (Page 14).

Re claims 9 and 23, Shriberg teaches the method of claim 1, in which the prosodic features are encoded within a prosodic feature vector.

Re claims 10 and 24, Shriberg teaches the method of claim 9, in which the prosodic feature vector is a multimodal feature vector (Pages 14-18 & Table 10).

Re claims 11 and 25, Shriberg teaches the method of claim 1, in which the discourse function is an intra-sentential discourse function (Page 8 & Table 1).

Re claims 12 and 26, Shriberg teaches the method of claim 1, in which the discourse function is ml inter-sentential discourse function (Page 8 & Table 1).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6810378 B2, US 5751906 A, US 5890117 A, US 20020078091 A1, US 20020142277 A1, US 20040044519 A 1, US 20050042592 A1, US 20070073533 A1, US 5732395 A, and Jurafsky et al., "Automatic Detection of Discourse Structure for Speech Recognition Understanding", Automatic Speech Recognition and Understanding, 1997. Proceedings., 1997 IEEE Workshop..

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)-270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Colucci Jr.
Patent Examiner
AU 2626
(571)-270-1847
Michael.Colucci@uspto.gov

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626